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Virginia Pharmacy Technician Exam Study Guide

The Virginia Pharmacy Technician Exam ("Exam") was developed as an objective means of measuring pharmacy technicians' knowledge of basic job responsibilities as required by Virginia law. The purpose of this Study Guide is to help pharmacy technicians prepare for the Exam. This Study Guide includes: (1) a description of the major areas covered on the Exam and the relative weight given to each area; (2) a list of key words to help you prepare for the exam; (3) a list of selected statues and regulations affecting pharmacy technicians in Virginia; (4) information about registering for the Exam; and (5) information about exam scoring.

1. TOPICS COVERED ON THE EXAM

The Exam will consist of 50 questions. As with many standardized tests, this Exam contains a few questions that are being pretested for possible use on future exams. Pretesting additional questions is necessary to assure that all items perform properly and that new versions of the Exam can be used in the future. Therefore, 45 of the 50 questions will be scored. All 45 scored items have been accepted by an expert panel and accepted by an expert panel approved by the Virginia Board of Pharmacy. The pretest items will not be identified for the candidate in order to assure that test statistics are valid. A scaled passing score of 75 or greater is needed to pass. There will be one hour for the Exam.

As with most standardized tests, there are multiple versions of this Exam. The various versions are carefully equated to assure that all have similar degrees of difficulty.

Questions on the Exam can be divided into 6 categories as outlined below. Because various types of questions are being pretested, the exact number of questions from each category cannot be predicted in advance. Following is a list of the 6 major content domains covered on the Exam and educational objectives that you should attempt to master. While this is not represented as an exhaustive list of everything you should know, being able to satisfy these educational objectives and the related concepts will help you prepare for the Exam.

DHP Virginia Pharmacy Technician Content Outline

Domain I: General Pharmacy Laws (12% or 5 – 6 items)
- Legal agencies
- Legal Restrictions
- Maintenance of Pharmacy Technician Registration

Domain II: Drug Identification (24% or 10 – 11 items)
- Understand the various types of dosage forms
- Understand the information on a manufacturer's drug package
- Drug schedules
- Identify the generic and trade names of the drugs as listed in Appendix B

Domain III: Dispensing Process (34% 0r 15 – 16 items)
- Understand the requirements for prescriptions (e.g., required information, allowable conditions)
- Processing Refill Request

- Identify the professions that may prescribe medications as listed in Appendix C and any prescribing limitations
- Translate prescription abbreviations and symbols
- Calculations
- Understand the use of therapeutically-equivalent drug products
- Recognize elements of a prescription label
- Prescription containers and closures
- Compounding
- Recognize third-party insurance (e.g., government programs, worker's compensation, HMO, PPO)

Domain IV: Other Regulated Sales and Record Keeping (10% or 4 – 5 items)
- Understand correct procedures regarding other regulated sales
- Understand file maintenance (e.g., chronological order, length of storage)

Domain V: Alternate Drug Delivery Systems (10% or 4 – 5 items)
- Unit dose
- Repackaging
- Understand automated devices for dispensing
-

Domain VI: Drug Storage and Inventory Management (10% or 4 – 5 items)
- Drug Storage
- Inventory Management

2. KEY WORDS

Following is a list of key words that you should know for each of the major areas listed above. While this is not represented as an exhaustive list of every term you should know, knowing each of these terms and the related concepts help you prepare for the Exam. You may find it helpful to make a list of definitions for words and terminology that may be new to you.

Technician Duties and General Information

Confidentiality	Food and Drug Administration (FDA)
Consumer Product Safety Commission (CPSC)	Over the counter (OTC) drugs
Controlled Substances Act (CSA)	Pharmacy security
Drug Enforcement Administration (DEA)	State Board of Pharmacy
	Technician duties

Dosage Forms

Aerosols	Chewable tablets
Capsules	Controlled-released products
Creams	Otic preparations

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Dosage forms	Parenteral medications
Elixirs	Reconstituting
Emulsions	Solutions
Enteric-coated tablets	Sublingual tablets
Gels	Suppositories
Lotions	Suspensions
Ointments	Syrups
Ophthalmic preparations	Transdermal patches

Prescription Containers and Closures

Applicator bottles	Closures
Child-resistant caps	Dropper bottles

Generic Substitution

Brand-name drugs	Generic drugs
Dispense as written	Multiple-source drugs

Information on Prescription Stock Bottle Labels

Controlled substance mark	Lot number
Expiration date	National Drug Code (NDC) number
Prescription-only symbol (Rx)	Stock bottle label
Legend Statement	

Controlled Substances

DEA number	Schedule IV (C-IV)
Emergency prescriptions	Schedule V (C-V)
Filing prescription forms	Schedule VI (C-VI)
Partial filling	Schedule V records log
Refilling prescriptions	Storing prescription stock
Schedule I (C-I)	Transfer warning statement
Schedule II (C-II)	Transferring medications
Schedule III (C-III)	Transferring prescriptions

Prescribers

Dentist (DDS or DMD)	Physician (MD)
Nurse practitioner (NP)	Physician assistant (PA)
Optometrist (OD)	Podiatrist (DPM)
Osteopathic physician (DO)	Veterinarian (DVM)

Receiving Prescriptions

Facsimile prescriptions	Transferred prescriptions
Oral Prescriptions	

Interpreting Directions for Use

aa or āā	disp	NKA	qod
aa	DTD	noc	Rx
ac	EC	NR	⏆
ad	el or elix	od	SA
ad lib	expect	oj	SC, subQ, or SQ
aff	fl	ophth	Sig
AM	fl oz	os	SL
ANX	g or gm	otic	SOB
app	gr	ou	sol
aq	gtt(s)	oz	SR
aq	h, hr or º	p	ss or ⏆⏆
as	HA	pc	stat
ASAP	HBP	pc & hs	supp
au	hs	ped	susp
BC	IM	PM	syr
bid	IV	po	T or tbsp
BP	kg	pr	t or tsp
c or ⏆	L	prn	tab(s)
cap(s)	LA	pulv	tid
cc	loc	q	tinc
cpd or cmpd	lot	qd	TR
cr	mcg or µg	qh	UD or ut dict
d	mEq	q4h	ung or oint
DAW	mg	qhs	vag
dis	ml	qid	w or wk

Calculations

Apothecary system	Kilogram (kg)
Avoirdupois system	Liter (L)
Cubic centimeter (cc)	Metric system
Dram (dr or ʒ)	Microgram (mcg)
Fluid dram (ʒ)	Milligram (mg)
Fluid ounce (fl oz or ℥)	Milliliter (mL)
Gallon (gal)	Ounce (oz)
Grain (gr)	Pint (pt)
Gram (g)	Quart (qt)
Household measures	

Patient Interaction

Calls that technicians can handle	Calls that technicians cannot handle

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Federal Privacy Requirements

Acknowledgement signature

Covered entity

Department of Health and Human Services

Electronic signature capture

Health Insurance Portability and
Accountability Act (HIPAA)

Minimum necessary rule

Minor

Notice of privacy practices

Privacy officer

Protected health information

The Dispensing Process

Automatic counting machines

Auxiliary labels

Computer checks

Conical graduate

Contraindications

Counting trays

Daily log

Distilled water

Drug interactions

Gelatin capsules

Graduated cylinder

Hypodermic needle and syringe log

Label requirements

Medication history

Meniscus

NDC number

Over-the-counter (OTC) medications

Patient profiles

Prescription form requirements

Prescription history

PRN refills

Reconstituting powders

Reconstituting tube

Refill regulations

Schedule V sales record log

Alternative Drug Distribution Systems

24-hour exchange

7-day exchange

Back-up dose

Blister pack

Compliance aids

Dosage spoon

Dropper

Long-term care facility (LTCF)

Lot or control number

Medication cart

Patient drawer or tray

Punch card

Repackaging

Returning unused medication

Unit-dose system

USP-NF Class B packaging materials

USP-NF Class C packaging materials

Sterile Product Compounding

Ampule

Aseptic technique

Biological safety cabinet

Biomedical waste disposal

Chemotherapy (cytotoxic drugs)

Clean room

Compounding

Dextrose 5% in water (D5W)

Diluent

Filter needle

Route of administration

High efficiency particulate air (HEPA) filter

Horizontal-laminar flow hood

Intramuscular (IM)

Intravenous (IV)

Labeling requirements

Large-volume parenteral

Multiple-dose vial

Parenteral medications

Piggyback

Sterile product risk levels

Sterile Product Compounding (continued)

Sharps   Subcutaneous (SubQ, SQ or SC)
Small-volume parenteral   Total parenteral nutrition (TPN)
Sterile drug products   Vertical laminar-flow hood

3. SELECTED STATUTES AND REGULATIONS

Following is a list of selected statutes and regulations that you should know for the Exam. This should not be considered to be a comprehensive list of all statutes and regulations that you should know as a pharmacy technician. Explanations of these statutes and regulations should be a part of the various Board-approved training programs. In addition, the text for each of these statutes and regulations is available from the Virginia Board of Pharmacy's website (www.dhp.virginia.gov/pharmacy).

Regulations

18VAC 110-20-170	Required minimum equipment
18VAC 110-20-200BCD	Storage of drugs, devices, and controlled paraphernalia
18VAC 110-20-240	Manner of maintaining record, prescriptions, inventory records
18VAC 110-20-255	Other dispensing records
18VAC 110-20-270	Dispensing of prescriptions, acts restricted to pharmacists; certification of completed prescriptions
18VAC 110-20-275	Delivery of dispensed prescriptions
18VAC 110-20-280	Transmission of a prescription by facsimile machine
18 VAC 110-20-285	Electronic Transmission of prescriptions from prescriber to pharmacy
18VAC 110-20-290	Dispensing of Schedule II drugs
18VAC 110-20-320	Refilling of Schedule III through VI prescriptions
18VAC 110-20-330	Labeling of prescriptions as to content and quantity
18VAC 110-20-350	Special packaging
18VAC 110-20-355	Pharmacy repackaging of drugs; records required; labeling requirements
18VAC 110-20-360	Issuing a copy of a prescription that can be refilled
18VAC 110-20-370	Issuing a copy of a prescription that cannot be refilled
18VAC 110-20-400	Returning of drugs and devices
18VAC 110-20-411-416	Compounding sterile pharmaceutical products

Statutes§ 54.1-2952.1   Prescription of certain controlled substances and devices by physician assistant
§ 54.1-2957.01   Prescription of certain controlled substances and devices by nurse practitioners
§ 54.1-3320   Acts restricted to pharmacists
§ 54.1-3404   Persons required to keep records of drugs; contents and form of record
§ 54.1-3408   Professional use by practitioners
§ 54.1-3408.03   Dispensing of therapeutically equivalent drug products
§ 54.1-3408.01   Requirements for prescriptions
§ 54.1-3410   When pharmacist may sell and dispense drugs

§ 54.1-3410.2   Compounding; pharmacists; authority to compound under certain conditions; labeling and record maintenance requirements

§ 54.1-3411   When prescriptions may be refilled

§ 54.1-3412   Date of dispensing; initials of pharmacist; automated data processing system

§ 54.1-3416   No prescriptions for preparations listed pursuant to Schedule V

§ 54.1-3427   Dispensing drugs without safety closure container

§ 54-1-3467   Distribution of hypodermic needles or syringes, gelatin capsules, quinine or any of its salts

§ 54.1-3468   Conditions to dispense device, item , or substance; records

4. REGISTERING FOR THE EXAM

You can take the Virginia Pharmacy Technician Exam at any of the conveniently located Iso-Quality Testing Centers located throughout Virginia as well as throughout the United States and the District of Columbia. To find a site near you, go to the Iso-Quality Testing website at www.isoqualitytesting.com. Click on Take A Test, and Locate a Testing Center.

A set of sample questions is available at this link:
http://www.dhp.virginia.gov/forms/pharmacy/Techs/SelfAssess_Questions.pdf

The sample questions reflect the content of the examination, but all questions on the actual examination are multiple choice.

To register, open your browser to www.isoqualitytest.com:
- Click on "Exam Registration"
  - Select "VA Pharmacy Technician" from the Organizations drop down menu
  - Select "VA Pharmacy Technician" from the Exam drop down menu
  - Click "Next"
- On the Login Screen, Click "Register"
  - Enter all the applicable information and click "Next"
- Selecting a Testing Site, Date, and Time
  - The VA Pharmacy Technician exam will be offered at over 200 sites throughout the United States and Canada. Based on the postal/zip code you provide, the five closest Testing Centers to your location will be shown.
  - Select a Testing Center, test date and time for the examination
  - Click "Next"
- The examination fee is $70.25. Enter your credit card information and click "Next"
- Agree to the Iso-Quality Testing Examination Agreement terms by checking the box. Click "Submit"
- Do not bring a calculator, scratch paper, or any other materials to the Testing Center. The testing system includes a pop-up calculator, and scratch paper will be provided.
- **<u>Important – Print, read and save the resulting Admission Letter</u>. You must bring the Admission Letter with you to the Testing Center. The Admission Letter and a government-issued photo ID must be presented at the Testing Center in order for you to take the examination**.

If you require a special testing accommodation under the Americans with Disabilities Act (ADA), please call the Virginia Board of Pharmacy at 804-367-4456. Any requested accommodations due to disabilities must be made directly to the board with supporting documentation from the physician who has diagnosed the disability. If the request is approved by the board, reasonable accommodations will be made at no additional cost.

5. EXAM SCORING

Exam results for successful candidates. The Exam is scored immediately and successful candidates are given an official report by Iso-Quality Testing immediately after completing the Exam indicating that they passed the Exam. Candidates may use this report to provide evidence to the Virginia Board of Pharmacy that they passed the Exam. The Board verifies all passing scores with Schroeder Measurement Technologies.

Exam results for unsuccessful candidates. The purpose of the Exam is to provide summative assessment (i.e., to determine whether an individual has achieved a certain level of competency). It is not designed for formative assessment (i.e., to give the candidate feedback). Schroeder Measurement Technologies does, however, provide diagnostic reports to help unsuccessful candidates focus their study time so they can successfully retake the Exam. This diagnostic report will indicate how the candidate performed on each section of the Exam. Candidates who do not pass the Exam will be allowed to retake the Exam after two weeks. Since there are multiple versions of the Exam, candidates who take retake the Exam will receive a different, but equivalent, set of questions.

Scoring. The pass/fail cut score is determined using criterion-referenced method that allows the performance of each candidate taking the examination to be judged against a predetermined standard rather than against other candidates. The predetermined standard is set by a committee of subject-matter experts working with testing experts to ensure the validity, reliability, and legal defensibility of the examination. A post-examination administrative review of the validity of the examination scores is routinely applied.

Appeals and rescoring. Errors in computer scoring are extremely rare, since keys (correct answers) are validating before tests are deployed to Test Centers, and candidate responses are automatically scored against test keys. Nevertheless, candidates who wish to appeal their test results are allowed to do so by completing an Exam Appeal Form available on the SMT Virginia Pharmacy Technician website at http://www.smttest.com/vapt/documents/ExamAppealForm.pdf and remitting a nominal examination review fee. Furthermore, candidates wanting to challenge specific questions may also do so using the Exam Appeal Form. In both cases, appeals and challenges must be transmitted to SMT within ten (10) days of test administration. You will be notified of the results of your inquiry within ten (10) business days of receipt.

Appendix A

Schedule of drugs

SCHEDULE II:

GENERIC NAME	SOME BRAND NAMES
meperidine	Demerol
morphine sulfate	M.S. Contin, Roxanol
oxycodone	Percocet, OxyContin

SCHEDULE III:

GENERIC NAME	SOME BRAND NAMES
codeine in combination with acetaminophen	Tylenol with codeine #2, #3, #4
hydrocodone	Tussionex, Vicodin, Lortab

SCHEDULE IV:

GENERIC NAME	SOME BRAND NAMES
diazepam	Valium
lorazepam	Ativan
alprazolam	Xanax

SCHEDULE V:

GENERIC NAME	SOME BRAND NAMES
most cough syrups containing codeine	Robitussin AC
diphenoxylate	Lomotil

SCHEDULE VI:

GENERIC NAME	SOME BRAND NAMES
digoxin	Lanoxin
amoxicillin	Amoxil
tramadol hydrochloride	Ultram

Appendix B

Top 50 Brand Drugs By Units in 2009

http://www.drugs.com/top200.html

Appendix C

Examples of professions that may prescribe drugs

Dentist (DDS or DMD)

Physician (MD)

Nurse practitioner (NP)

Physician assistant (PA)

Optometrist (OD)

Podiatrist (DPM)

Osteopathic physician (DO)

Veterinarian (DVM)